In the Claims

1. (Currently Amended) A method of voltage modulation for computed tomography (CT) imaging comprising the steps of:

acquiring a set of cardiac signals having a plurality of triggering pulses;

determining a period of delay after each triggering pulse;

after each period of delay, energizing a high frequency electromagnetic energy source to a data acquisition voltage;

acquiring a set of imaging data of a scan subject; and

after acquiring the set of imaging data, energizing the high frequency electromagnetic energy source to a non-data acquisition voltage until the period of delay after a next triggering pulse.

2. (Currently Amended) The method of claim 1 wherein the ~~second~~ non-data acquisition voltage is less than the ~~first~~ data acquisition voltage.

3. (Cancelled)

4. (Currently Amended) The method of claim 1 further comprising the steps of:

determining a primary and a secondary imaging stage from the set of cardiac signals;

energizing the high frequency electromagnetic energy projection source to the ~~first~~ data acquisition voltage during the primary imaging stage; and

energizing the high frequency electromagnetic energy projection source to the ~~second~~ non-data acquisition voltage during the secondary imaging stage.

5. (Original) The method of claim 4 further comprising the step of filtering low energy high frequency electromagnetic energy projected to the scan subject to reduce high frequency electromagnetic energy exposure to the scan subject.

6. (Original) The method of claim 1 further comprising the step of determining a radiation dosage profile from the set of cardiac signals.

7. (Currently Amended) A radiation emitting imaging system comprising:

a high frequency electromagnetic energy projection source configured to project high frequency energy toward a scan subject;

a detector assembly to receive high frequency electromagnetic energy attenuated by the scan subject and output a plurality of electrical signals indicative of the attenuation to a data acquisition system (DAS);

a control configured to:

determine a primary data acquisition stage~~[s]~~ and a secondary data acquisition stage~~[s]~~ for an R-R interval, the primary data acquisition stage beginning after a triggering pulse and the secondary data acquisition stage occurring after the primary data acquisition stage and ending before a next triggering pulse of a next R-R interval;

energize the high frequency electromagnetic energy projection source to a first voltage during the primary data acquisition stage to acquire primary imaging data;

energize the high frequency electromagnetic energy projection source to a second voltage different from the first voltage during the secondary data acquisition stage to acquire secondary imaging data; and

reconstruct an image of the scan subject from ~~the~~ imaging data acquired during each data acquisition stage.

8. (Original) The system of claim 7 further comprising a bowtie filter configured to filter a portion of the high frequency electromagnetic energy projected by the high frequency electromagnetic energy projection source to the scan subject.

9.-11. (Cancelled)

12. (Original) The system of claim 7 further comprising a plurality of EKG sensors configured to acquire a set of EKG signals of a cardiac region of the scan subject.

13. (Currently Amended) The system of claim 12 wherein the control is further configured to determine ~~[a]~~ the primary data acquisition stage and ~~[a]~~ the secondary data acquisition stage from the set of EKG signals.

14. (Original) The system of claim 13 wherein the control is further comprised to determine a number of subsets from the set of EKG signals and determine a triggering pulse within each subset and energize the high frequency electromagnetic energy projection source to the first voltage after a delay of the triggering pulse.

15. (Previously Presented) A computer readable storage medium having a computer program stored thereon and representing a set of instructions that when executed by a computer causes the computer to:

analyze a set of cardiac motion signals acquired from a set of EKG sensors from a torso region of a scan subject;

determine from the set of cardiac motion signals a number of primary data acquisition stages and a number of secondary acquisition stages, wherein each secondary acquisition stage follows a primary data acquisition stage and wherein each primary data acquisition stage occurs entirely within a respective single R-R interval;

transmit a first voltage modulation signal to a voltage source configured to energize an x-ray projection source used to project x-rays to the scan subject for data acquisition, the first voltage modulation signal configured to energize the voltage source to a first voltage for each primary data acquisition stage;

acquire a set of imaging data; and

transmit a second voltage modulation signal to the voltage source, the second voltage modulation signal being configured to energize the voltage source to a second voltage for each secondary acquisition stage, the second voltage being less than the first voltage.

16. (Original) The computer readable storage medium of claim 15 wherein the set of instructions further causes the computer to determine a dosage profile from the set of EKG signals and modulate the voltage source according to the dosage profile.

17.-18. (Cancelled)

19. (Original) The computer readable storage medium of claim 15 wherein the set of instructions further causes the computer to reduce x-ray projections to the scan subject during the number of secondary acquisition stages.

20. (Original) The computer readable storage medium of claim 15 wherein the set of instructions further causes the computer to determine the first voltage from a set of imaging parameters on a per imaging session basis.

21. (Original) The computer readable storage medium of claim 15 wherein the number of secondary acquisition states includes a number of non-data acquisition stages.

22. (Currently Amended) A method of cardiac CT imaging comprising the steps of:

acquiring a series of cardiac signals defining a number of cardiac cycles each cardiac cycle defined by successive R pulses;

determining a primary acquisition period that begins after a first R pulse of a cardiac cycle and a secondary acquisition period that occurs after the primary acquisition period and begins before a second R pulse of the cardiac cycle for the number of cardiac cycles;

energizing an x-ray source to a default, non-zero voltage;

initiating CT data acquisition for the number of cardiac cycles;

energizing the x-ray source to a primary voltage that exceeds the default, non-zero voltage during CT data acquisition for the primary acquisition period~~[s]~~; and

returning the x-ray source to the default, non-zero voltage during CT data acquisition for the secondary acquisition period~~[s]~~.

23. (Previously Presented) The method of claim 22 wherein the primary voltage includes a maximum voltage.

24. (Currently Amended) A radiation emitting imaging system comprising:

a high frequency electromagnetic energy projection source configured to project high frequency energy toward a scan subject;

a detector assembly to receive high frequency electromagnetic energy attenuated by the scan subject and output a plurality of electrical signals indicative of the attenuation to a data acquisition system (DAS);

a control configured to:

model data acquisition for a heart of the scan subject based on a series of cardiac signals defining a number of cardiac cycles of the heart, each cardiac cycle defined by a first R pulse and a second R pulse;

apply a first voltage ~~[of]~~ to the high frequency electromagnetic energy projection source between ~~a~~ the first and the second R pulses of each cardiac cycle;

acquire imaging data of the heart with the high frequency electromagnetic energy projection source at the first voltage;

thereafter apply a second voltage to the high frequency electromagnetic energy projection source, wherein said application of the second voltage occurs before the second R pulse of a current cardiac cycle, the first voltage exceeding the second voltage; and

reconstruct an image of the scan subject for multiple phases of each cardiac cycle.

25. (Previously Presented) The system of claim 24 wherein the ~~first~~ second voltage includes a default voltage and the ~~second~~ first voltage includes a maximum voltage.

26. (Previously Presented) The system of claim 25 wherein the default voltage includes a minimum voltage required to acquire data.